Amendments to the Claims:

1. (Currently Amended) An apparatus comprising:

a first mapper configured to receive first representations of a first portion of communication data, said first mapper configured to map the first representations of the first portion of the communication data into first mapped values according to a first mapping scheme; and

a second mapper configured to receive second representations of a second portion of the communication data, said second mapper configured to map the second representations of the communication data into second mapped values according to a second mapping scheme, the second mapping scheme exhibiting a mapping property that differs with the first mapping scheme,

wherein the first mapper is configured to ~~cause~~direct transmission of the first mapped values to a first antenna transducer among a plurality of antenna transducers and wherein the second mapper is configured to ~~cause~~direct transmission of the second mapped values to a second antenna transducer among the plurality of antenna transducers, the first and second antenna transducers configured to receive and transduce only the first mapped values and the second mapped values, respectively, into electromagnetic form for communication upon a communication channel, and

wherein the apparatus is configured to define a code comprising a plurality of layers defined over the first antenna transducer and the second antenna transducer, and wherein the apparatus is configured to form a composite code from each of the layers of the code, and

wherein a second layer of the code comprises a concatenated space time block code (STBC) formed by spherical modulation, wherein at least the first mapper is configured to perform the spherical modulation.

2. (Currently Amended) The apparatus of claim 1 further comprising a first encoder configured to receive the first portion of the communication data, said first encoder ~~for~~configured to ~~encoding~~encode the first portion of the communication data according to a first encoding technique and wherein the first representations of the first portion of the

communication data received by~~to which~~ said first mapper ~~is configured to receive~~ comprises first-encoded values formed by said first encoder.

3. (Currently Amended) The apparatus of claim 1 further comprising a second encoder configured to receive the second portion of the communication data, said second encoder configured to encode the second portion of the communication data according to a second encoding technique and wherein the second representations of the second portion of the communication data received by~~to which~~ said second mapper ~~is configured to receive comprise~~comprises second-encoded values formed by said second encoder.

4. (Currently Amended) The apparatus of claim 1, wherein the first mapped values into which said first mapper is configured to ~~maps~~map the first representations of the first portion of the communication data comprise a first set of mapped values, wherein the second mapped values into which said second mapper is configured to ~~maps~~map the second representations of the second portion of the communication data comprise a second set of mapped values, and wherein elements of the first set of mapped values ~~differing~~differ in value with elements of the second set of mapped values.

5. (Original) The apparatus of claim 4 wherein the first set of mapped values and the second set of mapped values formed by said first mapper and said second mapper, respectively, are formed of mutually-exclusive elements.

6. (Original) The apparatus of claim 4 wherein the mapping property exhibited by the second mapping scheme that differs with that of the first mapping scheme comprises vector magnitudes that differ.

7. (Currently Amended) The apparatus of claim 1 wherein the first mapped values into which said first mapper is configured to ~~maps~~map the first representations of the first portion of the communication data comprise a first set of mapped values that exhibits first geometric differences therebetween, wherein the second mapped values into which said second

representations of the second portion of the communication data comprise a second set of map values that exhibit second geometric differences therebetween.

8. (Original) The apparatus of claim 7 wherein the first geometric differences between the mapped values of the first set and the second geometric differences between the mapped values of the second set are mutually exclusive.

9. (Original) The apparatus of claim 7 wherein the mapping property exhibited by the second mapping scheme that differs with that of the first mapping scheme comprises second geometric differences that differ in lengths with lengths of the first geometric differences.

10. (Currently Amended) The apparatus of claim 1 wherein the mapping by which said first mapper is configured to~~maps~~ map the first representations and the mapping by which said second mapper is configured to~~maps~~ map the second representations are together selected to define a layered code having combined values that are applied to a respective one of the plurality of antenna transducers.

11. (Canceled)

12. (Currently Amended) The apparatus of claim 1, wherein the apparatus is further configured to facilitate ~~communicate~~communications with a receiving station configured to receive the first and second mapped values, the receiving station comprises a modified maximum likelihood decoder configured to:[[,]] ~~which~~

exploit ~~exploits~~ the difference in mapping properties between the first and second mapped values;[[,]] ~~configured to~~

receive indications of the communication data communicated upon the communication channel and delivered to the receiving station;[[,]] ~~said maximum likelihood decoder configured to~~

determine a maximum likelihood path that defines selection of values of the communication data, the maximum likelihood path selected from amongst a set of possible paths, each defining communication data value possibilities.

13. (Currently Amended) The apparatus of claim 12 wherein the set of possible paths from amongst which said maximum likelihood decoder is configured to~~selects~~ select the maximum likelihood path comprises fewer than all of the possible paths.

14. (Currently Amended) The apparatus of claim 12 wherein the set of possible paths from amongst which said maximum likelihood decoder is configured to ~~selects~~select the maximum likelihood path is selected responsive to at least the first mapping scheme pursuant to which said first mapper is configured to ~~maps~~map the first representations.

15. (Currently Amended) The apparatus of claim 14 wherein the set of possible paths from amongst which said maximum likelihood decoder is configured to ~~selects~~select the maximum likelihood path is further selected responsive to the second mapping scheme pursuant to which said second mapper is configured to ~~maps~~map the second representations.

16. (Currently Amended) A method comprising:

mapping first representations of a first portion of communication data into first mapped values according to a first mapping scheme;

mapping second representations of a second portion of the communication data into second mapped values according to a second mapping scheme, the second mapping scheme exhibiting a mapping property that differs with the first mapping scheme;

facilitating ~~selecting~~selection of the first mapped values and the second mapped values;

directing~~causing~~ transmission of only the first mapped values to a first antenna transducer among a plurality of antenna transducers and ~~causing~~directing transmission of only the second mapped values to a second antenna transducer among a plurality of antenna transducers;

defining a code, via an apparatus, comprising a plurality of layers defined over the first antenna transducer and the second antenna transducer; and

forming a composite code from each of the layers of the code,

wherein a second layer of the code comprises a concatenated space time block code (STBC) formed by spherical modulation, wherein at least a first mapper performs the spherical modulation.

17. (Currently Amended) The method of claim 16, further ~~comprises~~comprising:

transducing the selected first mapped values and the selected second mapped values, applied during said ~~selecting~~selection, into electromagnetic form; and

delivering~~causing delivery of~~, by way of the communication channel, the selected first and second mapped values, respectively, to a receiving station.

18. (Previously Presented) The method of claim 17 further comprising, decoding indications of communication data received at the receiving station, the decoding comprising determining a maximum likelihood path that defines selection of values of the communication data, the maximum likelihood path selected from amongst a set of possible paths, each defining communication data value possibilities.

19. (Currently Amended) The method of claim 18, ~~further comprising~~wherein, prior to said decoding, the method further comprises facilitating ~~selecting~~selection of the set of possible paths from which the maximum likelihood path is formable.

20. (Currently Amended) The method of claim 19 wherein the set selected during said ~~selecting~~selection of the set is selected responsive to the first and second mapping schemes used during said mapping.

21. (Currently Amended) An apparatus comprising:

means for mapping first representations of a first portion of the communication data into first mapped values according to a first mapping scheme;

means for mapping second representations of a second portion of communication data into second mapped values according to a second mapping scheme, the second mapping scheme exhibiting a mapping property that differs with the first mapping scheme;

means for facilitating ~~selecting~~selection of the first mapped values and the second mapped values; and

means for~~causing~~ directing transmission of the first mapped values and the second mapped values to only a respective one of a plurality of antenna transducers, and wherein the plurality of antenna transducers transduce the first mapped values and the second mapped values into electromagnetic form for communication upon a communication channel;

means for defining a code comprising a plurality of layers defined over the first antenna transducer and the second antenna transducer; and

means for forming a composite code from each of the layers of the code,

wherein a second layer of the code comprises a concatenated space time block code (STBC) formed by spherical modulation, wherein at least the means for mapping said first representations performs the spherical modulation.

22. (Currently Amended) The apparatus of claim 21, further comprising ~~a~~ means for receiving and encoding the first portion of the communication data, according to a first encoding technique to generate the first representations, the first representations comprise a first plurality of encoded values.

23. (Currently Amended) The apparatus of claim 21, further comprising ~~a~~ means for receiving and encoding the second portion of the communication data according to a second encoding technique to generate the second representations, the second representations comprise a second plurality of encoded values.

24. (Previously Presented) The apparatus of claim 1, wherein the first mapping scheme generates a first constellation set comprising a first plurality of symbol points and wherein the second mapping scheme generates a second constellation set comprising a second

plurality of symbol points, wherein a first distance between each of the first plurality of symbol points is different from a second distance between each of the second plurality of symbol points.

25. (Currently Amended) The method of claim 16, wherein prior to ~~causing~~facilitating transmission of only the first mapped values, the method further comprises:

generating, according to the first mapping scheme, a first constellation set comprising a first plurality of symbol points; and

generating, according to the second mapping scheme, a second constellation set comprising a second plurality of symbol points, wherein a first distance between each of the first plurality of symbol points is different from a second distance between each of the second plurality of symbol points.

26. (Previously Presented) The apparatus of claim 21, wherein the first mapping scheme generates a first constellation set comprising a first plurality of symbol points and wherein the second mapping scheme generates a second constellation set comprising a second plurality of symbol points, wherein a first distance between each of the first plurality of symbol points is different from a second distance between each of the second plurality of symbol points.

27. (Previously Presented) The apparatus of claim 1, wherein the first mapping scheme comprises a spherical modulation scheme and wherein the second mapping scheme comprises a lattice modulation scheme.

28. (Previously Presented) The method of claim 16, wherein the first mapping scheme comprises a spherical modulation scheme and wherein the second mapping scheme comprises a lattice modulation scheme.

29. (Previously Presented) The apparatus of claim 21, wherein the first mapping scheme comprises a spherical modulation scheme and wherein the second mapping scheme comprises a lattice modulation scheme.

30. (Canceled)

31. (Previously Presented) The apparatus of claim 1, wherein a first layer of the code comprises a concatenated space time block code (STBC) and a trellis code.

32. (Canceled)

33. (Currently Amended) The apparatus of claim 1, wherein the apparatus is configured to sum a first layer and ~~a~~the second layer of the code generating full diversity at the first and second antenna transducers.

34. (Previously Presented) The apparatus of claim 33, wherein the first layer of the code comprises a low modulus property that is utilized by a receiver to generate a maximum likelihood path defining selection of values of the first and second set of values.

35. (Canceled)

36. (Previously Presented) The method claim 16, wherein a first layer of the code comprises a concatenated space time block code (STBC) and a trellis code.

37. (Canceled)

38. (Currently Amended) The method of claim 16, further comprising summing a first layer and ~~a~~the second layer of the code generating full diversity at the first and second antenna transducers.

39. (Previously Presented) The method of claim 38, wherein the first layer of the code comprises a low modulus property that is utilized by a receiver to generate a maximum likelihood path defining selection of values of the first and second set of values.

40. (Canceled)

41. (Previously Presented) The apparatus of claim 21, wherein a first layer of the code comprises a concatenated space time block code (STBC) and a trellis code.

42. (Canceled)

43. (Currently Amended) The apparatus of claim 21, further comprising means for summing a first layer and ~~a~~the second layer of the code generating full diversity at the first and second antenna transducers.

44. (Previously Presented) The apparatus of claim 43, wherein the first layer of the code comprises a low modulus property that is utilized by a receiver to generate a maximum likelihood path defining selection of values of the first and second set of values.

45. (New) The apparatus of claim 1, wherein an error spectra of at least a first layer and the second layer of the composite code corresponds to the fewest errors shared in common by the first and second layers.

46. (New) The method of claim 16, further comprising determining that an error spectra of at least a first layer and the second layer of the composite code corresponds to the fewest errors shared in common by the first and second layers.

47. (New) The apparatus of claim 21 further comprising means for determining that an error spectra of at least a first layer and the second layer of the composite code corresponds to the fewest errors shared in common by the first and second layers.